

Serial No. 10/795,944
Supplemental Amendment dated August 15, 2005

Amendments to the Specification:

Please replace the paragraph that begins on page 3, line 8 with the following paragraph:

Referring to Fig. 1, there is shown the schematic for using the PEF-electroporation system as a secondary treatment for previously-dewatered sludge. In Fig. 1, the primary-treated wastewater is delivered to a bioreactor 10, which may or may not be provided with air depending upon the type of bioreactor used, as described hereinbelow. The bioreactor 10 may be aerobic, facultative, anoxic, or strictly anaerobic for performing biological digestion. From there the sludge may be sent to an optional secondary clarifier 12, if necessary. From there, the sludge may be recycled directly back to the bioreactor 10. The sludge may be optionally thickened at thickener 16, with excess sludge being sent to a sludge dewatering unit 20 for further dewatering for forming a filter cake. From sludge dewatering unit 20, the filtrate is recycled back to the bioreactor 10. The filtrate exiting the bioreactor 10, either directly or through secondary clarifier 12 and thickener 16, is delivered to electroporating device 14, which provides a pulsed electric field (PEF) with voltages between 15 kv./cm. and 100 kv./cm., as disclosed in detail in the above-mentioned patents and applications. The cellular units of the waste-activated sludge (WAS) treated by the electroporation device 14 [[is]] are broken up and destroyed, releasing intracellular and inter-cellular water, and organic solids-contents. The PEF process is applicable to biomass contained in biological sludges from all the types of secondary wastewater treatment bioreactors. The PEF process is effective because it lyses cells, and the resulting cells become more readily available as food when those treated cells are fed to a bioreactor.